Contamination Avoidance Detector Test Suite (CADTS)

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Background

- **The CADTS is a CTEIP New Start for FY 01 and initiated to develop new instrumentation, methodologies and modeling and simulation tools to evaluate current and developing Chem/Bio detector systems**
- **Existing test methodologies are not capable of complete evaluation of present and developing CB agent detectors**
  - **Can not detect agent challenges at very low concentrations**
  - **Can not track/quantify/control simulants in dynamic environment**
  - **Can not adequately correlate static chamber results to operational environments**
- **Existing CB signal generators are inadequate for credible model development**
  - **Live test very costly and time consuming**
  - **Need M/S capability to predict performance over wide**

Acquisition/Contracting

Strategy

- **Several Task Orders for Chem/Bio Standoff, Chem Point, Bio Point and M/S tools/architecture**
- **Project scheduled for 5 years**
- **Competition will be Full & Open with some Small Business Set aside and academia involvement**

Issues

- **Significantly improved Chem/Bio detector evaluation capability**
- **Develop credible Chem/Bio M/S capability**

PROGRAM TEAM

Identify the Program Acquisition Team by:

Lorraine Castillo	**PD**		**STRICOM**
Dr. Lyman Condie	**TD**		**DPG**
Marty Marshall		**Stdoff Dec**	**DPG**
Paul Davis		**Point Dec**	**DPG**
TBD		**Mod/Sim**	
Eddie Meadows		**Sup Cont**	**AEgis Tech**
Leeza Torres	**PA**		**STRICOM**
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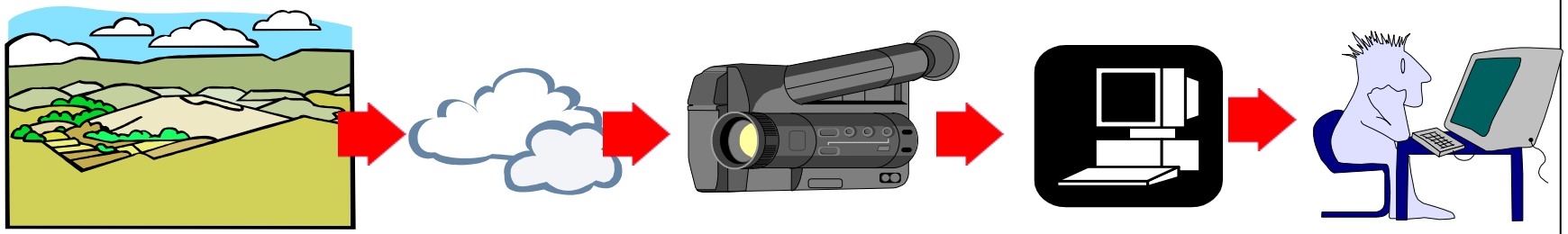
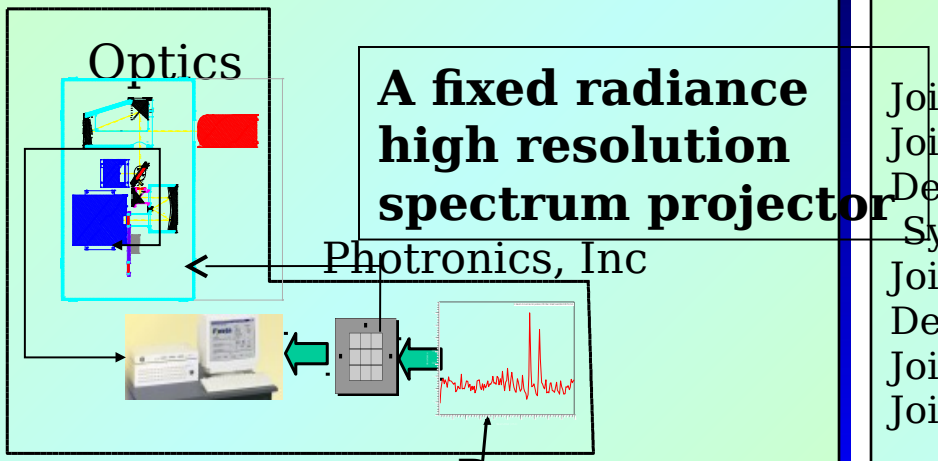
Typical Standoff Setup



Background | **Cloud** | **Detector Sensor** | **Algorithm** | **User**

- Simulant Field Test
- Chamber Test or Synthetic Environment
- Spectral Projector
- Synthetic Algorithm Stimulator
- Test Visualization
  - Training

CADTS Program Description



CUSTOMER/ USERS

Joint Bio Point Detection System, Block II
Joint Chem Bio Reconnaissance Integrated Detection System
Joint Service Warning and Identification Lidar Detector
Joint Bio Standoff Detector System
Joint Chem Bio Agent Water Monitor

Joint Service Wide Area Detection
Joint Service Modular Chem Bio Detector

DESCRIPTION

Develop methodology, instrumentation, and modeling and simulation tools to dynamically challenge and evaluate current and developmental CB detector systems over the range of expected use conditions. Includes simulations of meteorological conditions, terrain, background spectral environment for stand-off detectors, realistic CB agent challenges (vapor or aerosol concentration for point detectors, spectral characteristics for stand-off detectors), the presence of interferents, and platform characteristics.

FUNCTIONAL DATA

DT/OT Test Capability Required:

1. Agent challenges at low concentrations
2. Dynamic agent/simulant challenges
3. Quantification/assessment of interferent effec
4. Quantification/tracking of simulant clouds
5. M/S capability to predict performance over wide range of operational conditions

Critical Technical Issues (Potential contract areas!)

1. More sensitive CB referee systems.

2. Real time chemical and biological cloud tracking systems.

3. Better tools for real time data processing/integration.

4. Modeling and simulation tools to correlate chamber and
   field testing results.

5. Improved simulants for accurate agent performance
   correlation.

6. Develop test fixtures to provide realistic

CADTS
Master Program Schedule/Funding

Fiscal Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Requirement Generation									
Requirements/documentation App									
Solicitations/Awards									
Preliminary Design Review									
Critical design Review									
Execution/evaluation/test									
IOC/FOC									

Dollars in Thousands	Prior	2001	2002	2003	2004	2005	2006	2007	2008	2009
TOTAL Required	0	$	$$	$$	$$$	$$$	$$$			
$ <$1M										
$$ =$1M - $5M										
$$$ =$5M - $10M										
$$$$ =$10 - $20M										
Quantities	0	0	0	0	0	0	1			

SUMMARY

- **Existing test methodologies not capable of fully assessing**
  - **performance of existing and developmental CB agent**
  - **detectors (standoff and point)**
    - currently test only a subset of required performance envelope
    - static testing not representative of true operational environment
    - large scale “live” CB tests very costly, inability to control variables
- **New Chem/Bio test capabilities needed for T&E community**
    - agent challenges at low concentrations
    - dynamic agent/simulant challenges
    - quantification/assessment of interferent effects
    - quantification/tracking of simulant clouds